

NATIONAL FOREST RESERVATION COMMISSION

LETTER

FROM

THE SECRETARY OF WAR

TRANSMITTING, PURSUANT TO LAW

THE REPORT OF THE NATIONAL FOREST
RESERVATION COMMISSION FOR THE
YEAR ENDING JUNE 30, 1924



DECEMBER 3 (calendar day, DECEMBER 4), 1924.—Referred to the
Committee on Public Lands and Surveys

DECEMBER 16 (calendar day, DECEMBER 18), 1924.—Committee on
Public Lands and Surveys discharged and referred to the
Committee on Printing

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

NATIONAL FOREST RESERVATION
COMMISSION

LETTER

THE SECRETARY OF WAR

SENATE RESOLUTION 302

REPORTED BY MR. MOSES

IN THE SENATE OF THE UNITED STATES,
January 19, 1925.

Resolved, That the annual report of the National Forest Reservation Commission for the fiscal year ended June 30, 1924, be printed as a Senate document.

Attest:

GEORGE A. SANDERSON, *Secretary*.

CONTENTS

	Page
Review of year's work.....	1
Present status of purchase work.....	10
Protection, administration, and development of acquired lands.....	17
Appropriations and financial statement.....	27
Future work.....	30

CONTENTS

1	.....	1
10	.....	10
11	.....	11
12	.....	12
13	.....	13

LETTER OF TRANSMITTAL

NATIONAL FOREST RESERVATION COMMISSION

Washington, D. C., November 29, 1924.

The honorable the PRESIDENT OF THE SENATE.

SIR: In accordance with the provisions of section 5 of the act of Congress approved March 1, 1911 (36 Stat. 961), I have the honor to transmit herewith report of the National Forest Reservation Commission for the fiscal year ended June 30, 1924.

Respectfully,

JOHN W. WEEKS,
Secretary of War,

President National Forest Reservation Commission.

PERSONNEL OF THE NATIONAL FOREST RESERVATION COMMISSION
CREATED BY ACT OF MARCH 1, 1911

Hon. JOHN W. WEEKS, Secretary of War.
Hon. HUBERT WORK, Secretary of the Interior.
Hon. HENRY C. WALLACE, Secretary of Agriculture.
Hon. HENRY W. KEYES, Senator from New Hampshire.
Hon. JOHN K. SHIELDS, Senator from Tennessee.
Hon. WILLIS C. HAWLEY, Member of Congress from Oregon.
Hon. GORDON LEE, Member of Congress from Georgia.
W. W. ASHE, secretary, Atlantic Building, Washington, D. C.

REPORT OF THE NATIONAL FOREST RESERVATION COMMISSION FOR FISCAL YEAR ENDED JUNE 30, 1924

REVIEW OF YEAR'S WORK

The past year has been signalized by the purchase of lands at the lowest average price authorized during any year. With an appropriation of only \$450,000 there were approved for purchase 130,290 acres at an average price of \$3.26 per acre. In 1922 the average price at which the purchase of 242,169 acres was authorized was \$3.31; while the average price for the next lowest year was \$4.35 an acre for 79,923 acres in 1923.

The lands, the purchase of which was authorized during the fiscal year 1924, consisted of 130 tracts located in 10 States. Of these approved lands 50,422 acres can be classed as forested or partly forested lands on which there are stands of timber containing approximately 62,000,000 board feet of merchantable timber. The remaining lands consist of 1,548 acres of abandoned farm land, arable land, and grassland; 42,597 acres recently cut over or not yet restocked to young stands; 31,377 acres restocking to young timber either on cut-over lands or on abandoned farm land on which forest conditions are being reestablished; 4,346 acres of barren or badly burned land, but none of the burned land so badly burned but that forest conditions can be reestablished.

During the past year title passed to the Government to 228,004 acres at an average price of \$3.68. These acquired lands very largely consist of lands the purchase of which was approved during the preceding fiscal year.

During the past year, as heretofore, a policy of consolidation has been followed. The establishment of no additional purchase unit has been authorized, but material additions were made to the areas of several established purchase units, thus solidifying the forest lands, decreasing administrative costs by enlarging ranger districts, and facilitating protection against fire.

There have been acquired, or are now in process of being acquired, 2,346,354 acres at an average price of \$4.98 per acre. These lands, situated in 11 different States, are located in 19 purchase units, there being four additional units within which no purchases have been made. Purchases are authorized by the commission only within the boundaries of designated purchase units. These units have been located with a view to carrying out most effectively the provisions of the purchase act. Furthermore, single tracts even within a purchase unit are not acquired as a rule unless they either adjoin lands already acquired or are so situated as to admit of being protected and administered economically. The several tables which follow show by years the progress of purchase, the distribution of the lands by States, counties, watersheds, and purchase units, and the average prices which have been paid.

Table 1 shows by years since 1911, which was the year the law authorizing purchases was passed, the gross acreage (before survey and before the elimination of defects in title), the average price of lands approved for purchase, and the average prices each year at which purchases were authorized.

TABLE 1.—Gross acreage approved for purchase, by years

Year	Acreage	Average price	Year	Acreage	Average price
1912-----	222,820	\$5.00	1919-----	103,355	\$6.35
1913-----	415,603	4.75	1920-----	101,428	4.44
1914-----	353,634	5.10	1921-----	112,397	4.44
1915-----	244,173	5.90	1922-----	242,169	3.31
1916-----	54,898	5.96	1923-----	79,923	4.35
1917-----	175,463	4.86	1924-----	130,290	3.26
1918-----	185,199	5.12			

Gross area as approved and before surveyed-----acres-- 2,421,352
 Net area actually acquired or being acquired-----do-- 2,346,354
 Average price per acre-----\$4.98

It is of interest in this connection to make a comparison of the cost of the lands which have been acquired with their estimated present value. In making this comparison no increase in value has been allowed for the land and young growth. The Government is practically the only purchaser for such lands after the merchantable timber has been cut. It is believed that the present value of the land is no greater than the purchase price. Nor has any value been allowed for the increase in size and amount of young growth which is yet below merchantable limits, although during the 10 years and more which have elapsed since the first purchases were made a large number of trees too small at that time to be considered merchantable are now sufficiently large for economic utilization.

Comparison of cost of land with value July 1, 1924, and net purchase cost of land and timber compared with values of land and timber, July 1, 1924

Total cost of lands and cost of administration:	
2,346,354 acres of land, at \$5.91 per acre (total cost item in preceding statement includes \$0.93 per acre, the cost of purchase)-----	\$13,863,647
Total cost of administration and fire protection-----	1,543,859
Total gross cost-----	15,407,506
Present value of lands and receipts therefrom:	
Total receipts to July 1, 1924-----	731,411
2,346,354 acres of land at \$3.05 ¹ per acre-----	7,156,380
4,826,358 M board feet at \$2.80 per M-----	13,513,802
Total-----	21,401,593
Comparison of cost of lands with present value:	
Total present value-----	21,401,593
Less total gross cost-----	15,407,506
Excess of present value over gross costs-----	5,994,087

¹ This is the average value placed upon land alone, exclusive of timber, at the time of purchase.

Table 2 shows the distribution, by purchase units, of lands which have been acquired, additional areas approved for purchase, and the total acreage, by purchase units, to June 30, 1924.

TABLE 2.—*Summary to June 30, 1924, by purchase units of lands acquired and approved for purchase under the act of March 1, 1911*

Purchase unit and State	Total area approved for purchase	Area acquired	Area approved but not acquired
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Alabama, Ala.....	¹ 87,097	82,886	4,211
Allegheny, Pa.....	166,937	73,019	93,918
Arkansas, Ark.....	² 38,658	37,501	1,157
Boone, N. C.....	54,742	52,127	2,615
Cherokee, Tenn.....	141,636	141,628	6
Georgia, Ga.....	70,196	70,196	-----
Massanutten, Va.....	59,167	59,167	-----
Monongahela, Va.....	10,414	10,414	-----
Monongahela, W. Va.....	163,955	150,367	13,588
Total.....	174,369	160,781	13,588
Mount Mitchell, N. C.....	77,726	76,998	828
Nantahala, N. C.....	³ 75,089	74,687	402
Natural Bridge, Va.....	152,048	140,853	11,195
Ozark, Ark.....	⁴ 21,072	20,190	882
Pisgah, N. C.....	⁵ 88,302	88,247	55
Potomac, Va.....	42,102	41,817	285
Potomac, W. Va.....	39,119	34,596	4,523
Total.....	81,221	76,413	4,808
Savannah, Ga.....	89,783	88,138	1,645
Savannah, N. C.....	38,467	38,173	294
Savannah, S. C.....	20,166	19,522	644
Total.....	148,416	145,833	2,583
Shenandoah, Va.....	251,989	196,346	55,643
Shenandoah, W. Va.....	23,669	13,318	10,351
Total.....	275,658	209,664	65,994
Unaka, N. C.....	20,097	20,097	-----
Unaka, Tenn.....	73,012	54,207	18,805
Total.....	93,109	74,304	18,805
White Mountain, Me.....	32,256	32,256	-----
White Mountain, N. H.....	409,018	406,845	2,173
Total.....	441,274	439,101	2,173
White Top, Tenn.....	54,429	54,421	8
White Top, Va.....	45,209	45,131	78
Total.....	99,638	99,552	86
Grand total.....	2,346,354	2,123,150	223,204

¹ Does not include 17,749 acres of national forest created from public domain.

² Does not include 625,578 acres of national forest created from public domain.

³ Does not include 3,302 acres, a portion of the Olmsted lands transferred from the Treasury Department to Department of Agriculture under act of July 6, 1912. (37 Stat. 189.)

⁴ Does not include 278,563 acres of national forest land created from public domain.

⁵ Does not include 8,067 acres, a portion of the Olmsted lands transferred from the Treasury Department to Department of Agriculture under act of July 6, 1912. (37 Stat. 189.)

Table 3 shows by States the distribution of the lands approved for purchase during the year and by States the total acreage of lands approved for purchase since the inception of the work in 1911, together with the average price per acre and the total value.

TABLE 3.—Summary of lands approved for purchase by States

State	During fiscal year 1924			Accumulative to June 30, 1924		
	Acres	Average price	Value	Acres	Average price	Value
Alabama.....	3,241	\$4.74	\$15,367.25	187,097	\$4.70	\$409,835.52
Arkansas.....	621	3.09	1,917.75	159,731	3.45	206,177.65
Georgia.....	268	6.00	1,608.00	159,979	6.63	1,061,264.08
Maine.....				32,256	5.51	177,738.20
New Hampshire.....	707	9.00	6,363.00	409,018	6.85	2,802,773.14
North Carolina.....	1,122	5.44	6,108.50	354,427	6.25	2,220,110.02
Pennsylvania.....	46,679	3.06	143,454.00	166,937	2.94	491,913.09
South Carolina.....	743	5.25	3,904.00	20,166	5.43	109,602.47
Tennessee.....	616	3.77	2,321.00	269,077	5.08	1,367,642.44
Virginia.....	61,533	3.16	194,221.25	560,928	3.83	2,149,993.31
West Virginia.....	14,760	3.49	49,991.35	226,743	3.04	689,299.98
Total.....	130,290	3.26	425,256.10	2,346,354	4.98	11,686,349.90

Average cost per acre of all land approved to July 1, 1924, \$4.98.

¹ Does not include lands created national forest from public domain.

² Does not include the so-called Olmsted lands transferred from Treasury Department to Department of Agriculture under act of July 6, 1912. (37 Stat. 189.)

Table 4 shows as of June 30, 1924 the acreage of the purchase units by States, counties, and watersheds, and the acreage which has been approved for purchase, which has been acquired, the average price per acre, and the aggregate price paid by States, counties, and purchase units within counties and watersheds.

TABLE 4.—*Information as of June 30, 1924, as to purchase units and lands being acquired under the act of March 1, 1911*

State and county	Part I Location of purchase unit			Part II. Approved for purchase			Part III. Acquired		
	Unit	Watershed	Acres	Acres	Price	Value	Acres	Price	Value
ALABAMA									
Franklin.....	Alabama.....	Black Warrior.....	4,480	269.15	\$5.26	\$1,415.70	229.55	\$5.40	\$1,257.30
Lawrence.....	do.....	do.....	108,825	50,960.70	4.73	241,214.14	49,157.68	4.73	232,813.46
Winston.....	do.....	do.....	79,080	35,867.10	4.66	167,205.68	33,498.61	4.65	156,024.41
Total.....			192,385	87,096.95	4.70	409,835.52	82,885.84	4.70	390,095.17
ARKANSAS									
Baxter.....	Ozark.....	White.....	27,663	120.00	2.50	300.00	120.00	2.50	300.00
Crawford.....	do.....	Arkansas.....	14,648	1,765.56	3.40	6,081.68	1,440.56	3.44	4,961.68
Franklin.....	do.....	do.....	24,980	1,050.00	3.48	3,655.00	1,050.00	3.48	3,655.00
Garland.....	Arkansas.....	Washita.....	91,395	2,359.80	3.70	8,645.30	2,239.80	3.71	8,315.30
Howard.....	do.....	do.....	1,286						
Johnson.....	Ozark.....	Arkansas.....	71,734	2,332.23	2.51	5,858.03	2,332.23	2.51	5,858.03
Logan.....	Arkansas.....	Washita.....	20,521	648.38	4.18	2,712.50	648.38	4.18	2,712.50
Montgomery.....	do.....	do.....	139,002	5,908.61	4.20	24,702.67	5,471.14	4.21	23,029.63
Newton.....	Ozark.....	White.....	102,521	4,453.63	3.38	15,048.52	4,453.63	3.38	15,048.52
Perry.....	Arkansas.....	Arkansas.....	75,960	2,693.46	3.14	8,460.17	2,549.70	3.09	7,885.13
Pike.....	do.....	Washita.....	2,842	42.79	4.00	171.16	42.79	4.00	171.16
Polk.....	do.....	do.....	188,069	10,718.86	4.20	44,970.97	10,542.74	4.22	44,511.07
Pope.....	Ozark.....	Arkansas.....	186,524	7,510.90	2.86	21,539.24	7,510.90	2.86	21,539.24
Saline.....	Arkansas.....	Washita.....	56,123	3,112.56	3.22	10,029.68	3,112.56	3.22	10,029.68
Scott.....	do.....	Arkansas.....	229,341	6,925.45	4.11	28,461.85	6,686.53	4.31	28,816.17
Searcy.....	Ozark.....	White.....	15,402	76.90	3.18	244.54	76.90	3.18	244.54
Sebastian.....	Arkansas.....	Washita.....	7,702						
Stone.....	Ozark.....	White.....	64,837	3,763.06	2.65	9,959.52	3,205.06	2.67	8,544.52
Van Buren.....	do.....	do.....	2,677						
Washington.....	do.....	Arkansas.....	640						
Yell.....	Arkansas.....	do.....	146,049	6,248.38	2.77	17,336.82	6,208.37	2.77	17,186.82
Total.....			1,469,906	59,730.57	3.45	206,177.65	57,691.30	3.51	202,808.99
GEORGIA									
Dawson.....	Georgia.....	Toccoa.....	25	25.00	7.11	177.75	25.00	7.11	177.75
Fannin.....	do.....	do.....	49,963	35,344.63	6.57	232,177.92	35,344.63	6.57	232,177.92
Gilmer.....	do.....	do.....	1,054	60.95	7.06	430.51	60.95	7.06	431.51
Habersham.....	Savannah.....	Chattahoochee.....	20,847	3,540.43	6.01	21,290.76	3,391.60	6.01	20,397.78
Lumpkin.....	Georgia.....	Etowah.....	28,893	2,843.46	6.84	19,463.14	2,843.46	6.84	19,463.14
Rabun.....	Savannah.....	Savannah.....	214,449	86,242.25	6.85	590,497.72	84,747.23	6.90	585,178.98

TABLE 4.—Information as of June 30, 1924, as to purchase units and lands being acquired under the act of March 1, 1911—Continued

State and county	Part I. Location of purchase unit			Part II. Approved for purchase			Part III. Acquired		
	Unit	Watershed	Acres	Acres	Price	Value	Acres	Price	Value
GEORGIA—continued									
Towns.....	Georgia.....	Hiwassee.....	86,591						
Do.....	Savannah.....	Savannah.....	5,559						
Union.....	Georgia.....	Toccoa.....	120,367	31,922.12	\$6.18	\$197,226.28	31,922.12	\$6.18	\$197,226.28
White.....	do.....	Chattahoochee.....	52,865						
Total.....			580,613	159,978.84	6.63	1,661,264.08	158,334.99	6.66	1,055,052.36
MAINE									
Oxford.....	Androscoggin.....	Androscoggin.....	65,900						
Do.....	White Mountain.....	do.....	26,689	32,255.98	5.51	177,738.20	32,255.98	5.51	177,738.20
Do.....	do.....	Saco.....	18,587						
Total.....			111,176	32,255.98	5.51	177,738.20	32,255.98	5.51	177,738.20
MARYLAND									
Garrett.....	Youghiogheny.....	Monongahela.....	80,259						
NEW HAMPSHIRE									
Carroll.....	White Mountain.....	Merrimac.....	8,579						
Do.....	do.....	Saco.....	143,534	100,891.83	8.26	834,315.06	100,184.83	8.27	828,571.14
Coos.....	Androscoggin.....	Androscoggin.....	56,532						
Do.....	White Mountain.....	do.....	91,302						
Do.....	do.....	Saco.....	36,431	182,491.66	6.51	1,189,370.89	182,491.66	6.51	1,189,370.89
Do.....	do.....	Connecticut.....	135,229						
Grafton.....	do.....	do.....	83,654						
Do.....	do.....	Merrimac.....	261,332	125,634.11	6.20	779,087.19	134,168.31	6.19	768,839.60
Do.....	do.....	Saco.....	38,043						
Total.....			854,636	409,017.60	6.85	2,802,773.14	406,844.80	6.85	2,786,781.63
NORTH CAROLINA									
Avery.....	Boone.....	Catawba.....	51,871	20,165.61	2.34	47,346.28	19,671.40	2.27	44,755.98
Buncombe.....	Mount Mitchell.....	Tennessee.....	63,369	13,257.52	10.99	145,765.21	12,731.45	11.12	142,082.72
Do.....	Pisgah.....	do.....	22,894	16,382.80	5.23	85,690.30	16,382.80	5.23	85,690.30
Burke.....	Boone.....	Catawba.....	63,633	8,347.66	5.59	46,337.02	6,809.26	5.64	38,432.47
Caldwell.....	do.....	do.....	81,767	25,836.10	2.44	63,155.38	25,253.55	2.40	60,890.17
Do.....	Yadkin.....	Yadkin.....	34,592						

Cherokee	Cherokee	Hiwassee	5,410						
Do	Nantahala	do	86,922						
Clay	Georgia	do	7,152						
Do	Nantahala	do	76,400	2,737.26	5.51	15,008.49	2,650.14	5.50	14,575.77
Graham	do	Little Tennessee	188,681						
Haywood	Pisgah	Tennessee	61,231	834.10	5.00	4,170.50	834.10	5.00	4,170.50
Do	Smoky Mountain	do	90,915						
Henderson	Pisgah	do	24,394	18,635.06	5.09	94,908.56	18,635.06	5.09	94,908.56
Jackson	do	do	96,798						
Do	Savannah	Savannah	38,014	2,967.76	7.84	23,242.77	2,967.76	7.84	23,242.77
McDowell	Boone	Catawba	30,946						
Do	Mount Mitchell	do	85,967	42,930.89	6.81	292,373.30	42,730.26	6.81	291,069.20
Macon	Nantahala	Little Tennessee	135,029	70,131.58	7.08	491,522.25	69,817.17	7.01	489,722.68
Do	Savannah	Tennessee	75,336	35,499.39	7.89	230,171.78	35,204.87	7.91	278,525.39
Madison	Unaka	do	70,770	20,096.92	5.80	117,998.04	20,096.92	5.80	117,998.04
Mitchell	Boone	Catawba	503						
Do	Mount Mitchell	Tennessee	17,172						
Do	Unaka	do	58,387						
Swain	Nantahala	Little Tennessee	27,927	2,219.90	5.54	13,300.42	2,219.90	5.54	13,300.42
Do	Smoky Mountain	Tennessee	248,786						
Transylvania	Pisgah	do	111,237	52,449.57	4.84	254,211.88	52,396.49	4.84	283,702.13
Do	Savannah	Savannah	44,059						
Watauga	Boone	Tennessee	5,839	392.99	9.23	3,626.40	392.99	9.23	3,626.40
Do	Yadkin	Yadkin	30,856						
Wilkes	do	do	129,048						
Yancy	Mount Mitchell	Tennessee	71,964	21,537.16	11.20	241,181.44	21,537.16	11.20	241,181.44
Do	Unaka	do	41,697						
Total			2,180,466	354,422.27	6.26	2,220,110.02	350,331.28	6.36	2,227,374.94
PENNSYLVANIA									
Elk	Allegheny	Allegheny	147,789	57,320.32	2.86	163,950.58	15,834.33	2.50	39,585.81
Forest	do	do	187,502	52,174.11	2.72	142,260.79	29,853.51	2.51	74,990.58
McKean	do	do	219,976	26,693.53	3.42	90,819.01	11,023.73	3.90	43,060.62
Warren	do	do	189,545	30,748.70	3.08	94,882.71	16,307.37	2.78	45,452.60
Total			744,812	166,936.66	2.94	491,913.09	73,018.74	2.78	203,089.61
SOUTH CAROLINA									
Oconee	Savannah	Savannah	97,434	20,166.57	5.43	109,602.47	19,522.54	5.43	106,005.18
Pickens	do	do	41,533						
Total			139,267	20,166.57	5.43	109,602.47	19,522.54	5.43	106,005.18
TENNESSEE									
Blount	Smoky Mountain	Tennessee	143,650						
Carter	Unaka	do	156,219	24,110.86	3.70	88,956.65	23,785.19	3.81	87,816.80
Do	White Top	do	300						
Cooke	Smoky Mountain	do	25,916						
Do	Unaka	do	15,740	5,805.52	9.70	52,249.68			

TABLE 4.—Information as of June 30, 1924, as to purchase units and lands being acquired under the act of March 1, 1911—Continued

8

NATIONAL FOREST RESERVATION COMMISSION

State and county	Part I. Location of purchase unit			Part II. Approved for purchase			Part III. Acquired		
	Unit	Watershed	Acres	Acres	Price	Value	Acres	Price	Value
TENNESSEE—continued									
Greene	Unaka	Tennessee	42, 188	13, 902. 67	\$6. 90	\$95, 722. 35	6, 598. 65	\$4. 68	\$30, 935. 44
Johnson	do	do	3, 058						
Do	White Top	do	70, 443	31, 538. 44	4. 54	143, 146. 18	31, 530. 50	4. 54	143, 105. 98
McMinn	Cherokee	do	3, 328	1, 516. 57	4. 08	6, 155. 15	1, 516. 57	4. 08	6, 185. 15
Monroe	do	do	141, 548	19, 060. 56	3. 90	74, 343. 73	19, 052. 37	3. 90	74, 273. 55
Polk	do	Alabama	15, 144						
Do	do	Tennessee	158, 027	121, 058. 74	5. 43	657, 475. 02	121, 058. 74	5. 42	657, 475. 02
Servier	Smoky Mountain	do	183, 635						
Sullivan	Unaka	do	6, 406	4, 807. 43	3. 50	16, 826. 01			
Do	White Top	do	26, 227	22, 890. 96	4. 98	114, 314. 66	22, 890. 96	4. 98	114, 314. 66
Unicoi	Unaka	do	118, 986	24, 385. 27	4. 85	118, 423. 01	23, 823. 51	4. 85	115, 701. 52
Washington	do	do	29, 888						
Total			1, 140, 703	269, 077. 02	5. 08	1, 367, 642. 44	250, 256. 49	4. 91	1, 229, 808. 12
VIRGINIA									
Amherst	Natural Bridge	James	93, 962	34, 977. 98	5. 87	205, 434. 75	34, 506. 22	5. 38	185, 661. 75
Augusta	do	Potomac	71, 212	30, 780. 97	3. 37	103, 775. 20	21, 016. 77	3. 26	68, 674. 32
Do	Shenandoah	James	103, 405	142, 491. 14	3. 54	503, 497. 85	136, 747. 54	3. 52	481, 779. 35
Do	do	Potomac	75, 827						
Bath	do	James	32, 994	22, 908. 88	2. 50	57, 272. 20	22, 908. 88	2. 50	57, 272. 20
Bedford	Natural Bridge	Roanoke	45, 733	16, 928. 75	6. 20	104, 993. 56	16, 710. 81	6. 20	103, 605. 31
Botetourt	do	James	29, 319	22, 925. 75	7. 18	164, 697. 40	22, 839. 94	7. 12	162, 704. 57
Carroll	White Top	Ohio	10, 861	4, 268. 94	2. 42	10, 334. 66	4, 190. 70	2. 36	9, 904. 34
Frederick	Potomac	Potomac	8, 002	4, 308. 67	3. 50	14, 930. 01	4, 308. 67	3. 50	14, 930. 01
Grayson	White Top	Ohio	90, 318	6, 992. 28	2. 83	19, 818. 63	6, 992. 28	2. 83	18, 818. 63
Highland	Monongahela	Potomac	21, 854	10, 413. 60	2. 73	28, 148. 40	10, 413. 60	2. 73	20, 148. 40
Do	Shenandoah	James	29, 395	18, 248. 33	2. 86	70, 524. 04	17, 520. 57	3. 83	67, 097. 46
Nelson	Natural Bridge	do	68, 618	1, 288. 27	2. 75	3, 542. 74	1, 288. 27	2. 75	3, 542. 74
Page	Massanutten	Potomac	31, 457	20, 082. 18	1. 80	36, 336. 36	20, 082. 18	1. 80	36, 336. 36
Rockbridge	Natural Bridge	James	73, 731	45, 145. 91	4. 25	192, 083. 96	44, 491. 37	4. 26	189, 557. 24
Do	Shenandoah	do	4, 682	648. 66	2. 50	1, 617. 32	452. 39	2. 49	1, 126. 64
Rockingham	Massanutten	Potomac	35, 434	8, 661. 69	1. 42	131, 100. 71	8, 661. 69	1. 42	131, 100. 71
Do	Shenandoah	do	135, 380	67, 692. 48	3. 07	208, 049. 84	18, 716. 48	3. 26	61, 121. 84
Shenandoah	Massanutten	do	78, 006	27, 920. 87	2. 57	71, 910. 58	27, 920. 87	2. 57	71, 910. 58
Do	Potomac	do	52, 717	37, 793. 39	2. 91	110, 176. 39	37, 508. 26	2. 71	109, 346. 38
Smythe	White Top	Tennessee	45, 454	11, 306. 84	3. 50	39, 606. 07	11, 306. 84	3. 50	39, 606. 07

Warren.....	Massanutten.....	Potomac.....	8,274	2,502.08	1.64	4,106.84	2,502.08	1.64	4,106.84
Washington.....	White Top.....	Tennessee.....	31,146	12,152.94	3.50	42,535.29	12,152.94	3.50	42,535.29
Wythe.....	do.....	do.....	21,481	10,488.09	2.43	25,500.51	10,488.09	2.43	25,500.51
Total.....			1,199,262	560,928.69	3.83	2,149,993.31	493,727.44	3.87	1,914,787.54
WEST VIRGINIA									
Grant.....	Monongahela.....	Potomac.....	16,487	9.55	2.50	23.88	9.55	2.50	23.88
Hampshire.....	Potomac.....	do.....	2,418	1,637.17	5.40	9,369.79	1,557.99	5.40	8,969.89
Hardy.....	do.....	do.....	81,084	37,482.11	3.01	112,902.37	33,038.11	3.04	100,571.22
Pendleton.....	Monongahela.....	do.....	101,546	28,243.65	2.61	73,797.31	28,243.65	2.61	73,797.31
Do.....	Shenandoah.....	do.....	77,439	23,668.45	3.27	77,562.28	13,318.45	3.50	46,512.28
Pocahontas.....	Monongahela.....	Ohio.....	71,978	22,627.57	3.36	76,034.88	12,763.85	3.32	42,475.40
Preston.....	do.....	Monongahela.....	60,246						
Randolph.....	do.....	do.....	193,980	62,892.70	2.93	184,419.21	59,468.38	2.85	169,654.79
Tucker.....	do.....	do.....	269,852	50,181.95	3.09	155,190.26	49,880.92	3.07	152,981.62
Total.....			875,030	226,743.15	3.04	689,299.98	198,280.90	3.00	594,986.39
Grand total.....			9,568,515	2,346,354.30	4.98	11,686,349.90	2,123,150.30	5.13	10,888,528.13
Grand total 1923.....			9,352,733						
Increase 1924.....			215,782						

PRESENT STATUS OF PURCHASE WORK

There have been acquired, or there are in progress of being acquired, 2,346,354 acres on the 23 designated purchase units. These units have a gross area of 9,568,515 acres. This gross area which is given, however, includes four units, the Smoky Mountain, the Youghiogheny, the Androscoggin, and the Yadkin, on which no purchases so far have been made. This area of purchased land and of land being purchased, with the addition of any public lands which have been set aside within the purchase units for national forest purposes, amounts to 38 per cent of the land within the purchase units which is of such character that its purchase is desirable, that is after excluding from the gross acreage of the purchase units the agricultural lands, the mineral lands, and the lands held for water-power purposes, but including all strictly forest lands. Certain of these forest lands are available for immediate purchase; others are being operated and will not be available for purchase until the timber has been removed; while other lands at present are being held by their owners as an investment.

During the past year no lands were considered for purchase on the Massanutten, Pisgah, Georgia, Cherokee, Mount Mitchell, and Ozark purchase units.

If the four units within which no purchases have been authorized are also eliminated, somewhat more than 40 per cent of the area within the remaining units has been approved for purchase and is in process of being acquired.

The following table shows for the various purchase units the per cent of purchaseable land which has been or which is being acquired and the gross area of each unit:

TABLE 5.—Gross area of purchase units and per cent of land acquired in each unit

Unit	Per cent acquired	Gross area of purchase units	Unit	Per cent acquired	Gross area of purchase units
		<i>Acres</i>			<i>Acres</i>
Alabama.....	67	192,385	Pisgah.....	30	316,554
Allegheny.....	23	744,812	Potomac.....	79	144,221
Arkansas.....	72	958,290	Savannah.....	30	538,431
Androscoggin.....		122,432	Shenandoah.....	70	459,122
Boone.....	30	234,559	Smoky Mountain.....		692,902
Cherokee.....	48	323,457	Unaka.....	23	543,339
Georgia.....	21	346,910	White Mountain.....	52	843,380
Massanutten.....	60	153,171	White Top.....	47	296,230
Monongahela.....	33	735,943	Yadkin.....		194,496
Mount Mitchell.....	45	238,472	Youghiogheny.....		80,259
Nantahala.....	15	514,959			
Natural Bridge.....	41	382,575			
Ozark.....	59	511,616	All units.....	38	9,568,515

The lands approved for purchase during the year consisted of 130 different tracts, having, as stated, a total area of 130,290 acres. The lowest prices at which lands were authorized for purchase during the year were one tract of 134 acres at \$1.50 per acre; two tracts aggregating 857 acres at \$2 per acre; while 10 tracts, having a total area of 6,005 acres, were approved at \$2.50 per acre. The highest price paid was \$9 an acre for three tracts, having an aggregate area of 811 acres, located on the White Mountain and Natural Bridge units.

White Mountain purchase unit.—During the year only one tract, so located, however, as to effect a desirable consolidation and having an area of 707 acres, was approved for purchase. There have been approved for purchase in the White Mountains a total of 441,274 acres, leaving, after eliminating the agricultural lands and those lands adapted to water-power development, 519,332 acres which still remain to be acquired. Negotiations are now in progress for several large tracts which, in case the negotiations terminate successfully and the lands are acquired, would result in consolidation at a number of places. The acquisition of these lands would also bring under Government control a large area of forested lands located on high slopes of several mountains, and much of it so situated as to have high value as protection forest. In addition to the agricultural lands owners of 101,250 acres have, by managing their lands for permanent yield, at least temporarily, withdrawn them from possible sale to the Government. The lands which have been acquired are, as a rule, well consolidated for administration and for protection against fire. Future purchase work looks forward to acquiring additional lands in the southwestern portion of the unit and on the head of the Pemigewasset, Sawyer, Swift, and Mad Rivers. The lands on these streams are at present being operated and can not be acquired until the owners desire to sell. Certain areas of high slopes and other lands having high protective value should be acquired while yet in forest.

Allegheny purchase unit.—During the past year the purchase of additional lands to the aggregate amount of 46,679 acres in 34 tracts was authorized for this unit, the largest consisting of four tracts—8,771 acres, 7,400 acres, 6,667 acres, and 5,901 acres. Other less important purchases on this forest were one of 2,737 acres, one of 2,314 acres, and three of between 1,000 and 1,500 acres. The lands being acquired on this forest consist very largely of cut-over lands but well stocked to young timber, and for this reason, on account of the excellent local market for timber of small size and for all other classes of forest products, they offer high investment potentialities. Notwithstanding occasional fires, these young stands, as a rule, are of good density. They consist largely of beech, birch, and maple in the northern portion of the forest and of chestnut and oak in the southern portion. The rate of growth of these species is good, and it is expected that the products of this young timber will contribute materially to maintaining the many industries in the region which are dependent upon wood for their operation. While most of the lands being acquired adjoin lands already approved for purchase, it has seemed desirable to acquire certain tracts of exceptional value which are not at present contiguous to lands already approved for purchase but which are so situated that it is believed that there will be no difficulty in ultimate consolidation, and the future purchase policy has this in view. There have been approved for purchase on this unit a total of 166,937 acres out of a gross area of 744,812 acres within the purchase unit.

Monongahela purchase unit.—Lands on the Monongahela purchase unit the purchase of which was authorized during the past year consist of 13 tracts, none of them large but all located so as to effect consolidation and to be of value in facilitating administration. The lands approved for purchase are largely cut over and in young timber.

The young timber consists chiefly of beech, birch, maple, and chestnut and is in thrifty condition. These lands are located near the industrial section of West Virginia and they should contribute materially to the future timber supply of this region. The land at present in Government ownership consists of a number of blocks of various sizes which are quite solid but are irregular in outline and often poorly located for efficient administration. These blocks are separated from each other by extensive areas of agricultural lands. The purchase policy has for its object the rounding out of these irregular blocks into more logical units for protection and future lumbering operations. Out of the 735,943 acres within this purchase unit, more than 200,000 acres are classed as agricultural or otherwise not suited for purchase. The total area which has been approved for purchase amounts to 174,369 acres.

Massanutten purchase unit.—The Massanutten purchase unit occupies several low and parallel mountain ranges separated by narrow agricultural valleys and lying entirely within the valley of Virginia. Its forests are largely of oak and chestnut. There have been approved for purchase 59,167 acres out of 153,171 acres within the purchase unit, of which nearly 60,000 acres are agricultural. During the fiscal year no additional lands were approved for purchase on this unit. Both protection and administration at present are difficult on this unit, especially on the northern portion on account of the large number of interior holdings and the irregular boundaries of the acquired lands. The future policy looks toward solidifying the Government's holdings through the acquisition of the numerous small bodies in the northern portion of the unit which are now in private ownership. The south end of the unit will be virtually completed through the purchase of one large and some adjoining small tracts.

Potomac purchase unit.—The Potomac purchase unit is located upon the headwaters of the Potomac River. There have been approved for purchase a total of 81,221 acres out of a total of 144,221 acres within the purchase unit. Of the remaining lands 41,702 acres are agricultural. The lands, the purchase of which was approved during the past year, consist of five small tracts having a combined area of 581 acres. They are all cut-over tracts but well stocked to young timber, chiefly chestnut, chestnut oak, white and red oaks. Chestnut oak forms a large part of the growth on this and nearby forests. With the threatened destruction by blight of the chestnut there is a prospective increase in the value of chestnut oak. On account of its bark, chestnut oak constitutes one of the most valuable sources of tannin, and is highly prized not only on account of the high proportion of its tannin content but also on account of the excellent quality of the leather produced by its use. The holdings of the Government on this unit are, as a rule, well solidified, except for agricultural valleys which form a number of interior holdings. But a few small and several large holdings still remain which should be acquired.

Shenandoah purchase unit.—Purchase work on this unit was signaled during the past year by the purchase of six tracts having a total area of 61,845 acres. One of these tracts, consisting of nearly 60,000 acres, covers both slopes of the great Shenandoah Mountain and stretches entirely across the northern portion of the national

forest. Except for a number of interior holdings its acquisition largely solidifies this portion of the unit. About 40,000 acres of this tract are timbered with merchantable stock, though most of the timber has been culled of the best grades and some of the trees have been damaged by fire. While 16,500 acres have been burned quite severely, sufficient seed trees and sprout switches remain to assure early restocking on this portion. The fires have not been so severe as to impair seriously the producing capacity of the soil. Chestnut oak is the predominating species—a tree of great value on account of its bark as a source of tannin. There has been approved for purchase on this unit a total of 275,658 acres out of 459,122 acres within the purchase unit. Except for agricultural lands the national forest holdings form an almost solid block and on the whole, except on the northern end of the unit, are well rounded out for efficient protection against fires and for economical administration. In addition to several larger tracts which should be acquired at the northern end of the unit, there remain a number of small tracts along the western edge.

Natural Bridge purchase unit.—The purchase of 9,958 acres offered by seven different owners was authorized on this unit during the past fiscal year. The total area acquired and being acquired is thus increased to 152,048 acres. The largest tract, the purchase of which was approved during the past year, has an area of more than 8,500 acres and is so located as to fill in the northeastern portion of the unit, extending the area of lands approved for purchase to the crest of the Blue Ridge Mountain. The other tracts, all comparatively small, are of value in solidification. The large number of interior holdings on this forest, especially on that portion which is located to the north of the James River, increase the fire hazard and the cost of protection against fire, and consequently it becomes extremely desirable from an administrative standpoint that such privately owned holdings be eliminated. The administrative value of these small tracts, the purchase of which promotes solidification, is for this reason relatively greater than would be indicated by their mere acreage. The two most important objectives in future purchase work on this forest are to effect consolidation and to acquire the several large tracts in the middle portion of the unit and along its eastern edge and located on and near the Blue Ridge Mountain. Most of these lands are at present being operated for timber. The United States Geological Survey approved during the present year a slight change in the boundary of this purchase unit, which now has a gross area of 382,575 acres.

White Top purchase unit.—The status of purchase on this unit is practically unchanged from the conditions last year. During the past year there was approved for purchase only one small tract of 80 acres, the acquisition of which, however, was of value from an administrative standpoint in promoting solidification. Of the total area of 296,230 acres there have been approved for purchase 99,638 acres. Of the remaining lands, 84,592 acres are agricultural in character and should not be acquired. Purchases on the western portion of this unit are largely completed except for a few interior holdings or tracts the acquisition of which will extend the national forest to its logical boundaries. There still remain to be acquired, however, a number of large tracts at the eastern end of the purchase

unit, while in the middle part of the unit several extensive holdings are still in private hands and are now being operated. These, consequently, will not be available for purchase until the removal of the timber has been completed unless it should be found advantageous to acquire them with the timber.

Boone purchase unit.—During the past year there has been only slight change in the status of lands on this unit, only 410 acres in two tracts having been approved for purchase. Both of these tracts, though culled of the best trees, still contain considerable merchantable timber. There remain a large tract at the eastern end of the purchase unit and several large tracts toward the southern end of the unit which should be acquired. These tracts, however, are timbered in whole or in part and are at present being operated or being held for operating purposes, and consequently it seems best to defer considering them for purchase until they have been cut over, unless it is found that they advantageously can be acquired with the timber. For this reason purchase work for the next year will probably, as during the past few years, be chiefly limited to effecting minor consolidations. Practically all forest land has been acquired on Wilson Creek, and while a number of interior holdings remain in private hands these are largely lands which are used for farming purposes. A number of small interior holdings which are in forest can advantageously be acquired in the northeastern part of the purchase unit. Out of the total area of 234,559 acres on this unit there have been approved for purchase 54,742 acres, while of the remaining lands about 25,000 acres are being held by private owners as productive forest properties and 48,410 acres are classed as agricultural lands.

Mount Mitchell purchase unit.—During the past year no lands were approved for purchase on this unit, consequently the status is the same as for the preceding year. The total area which has been approved for purchase on this unit amounts to 77,726 acres out of a total of 238,472 acres, of which 34,150 acres held by private owners are being protected or are being managed for timber production, while 64,691 acres are farming lands or are held in connection with farms. Within the Mount Mitchell unit is located the Black Mountain range on which are the highest mountain peaks in the eastern United States. The greater portion of the eastern slope of this range is in Government ownership. Only a small part of the western slope has been acquired, however. The purchase policy looks forward to acquiring this land whenever it is possible to reach price agreement with the owners and when funds are available for its purchase. On account of its altitude, Mount Mitchell, from which the unit takes its name, is yearly visited by many thousand tourists and sightseers. Its summit is reached by a well-graded automobile road. Although much of the spruce land on the slopes of this mountain and on near-by lands was burned over after the timber was removed, as a result of the protection which has been given it since it was acquired by the Government a stand of hardwoods has been established and the coniferous growth is in places reentering this stand of hardwoods.

Unaka purchase unit.—Purchase work on the Unaka purchase unit was marked during the past year by the acquisition of only two small tracts having a combined area of 616 acres, thus bringing

the area of land approved for purchase up to 93,109 acres. Of the total area of 543,339 acres, of which 137,472 acres are agricultural lands which should not be acquired, there still remain about 330,000 acres available for purchase, but of this amount about 98,000 acres is held by owners who do not wish to sell at present or is land which is being operated for its timber. The national forest lands as yet are not well consolidated and the most economic administration consequently is not feasible. It is also difficult to secure most efficient protection against fires. Future policy of purchase will be entirely along the line of consolidation. On the western end of the unit there are a number of small holdings the acquisition of which will materially assist in improving administrative conditions, while the purchase of a number of large tracts in the central portion of the unit will be required to better materially the conditions in that section. Lands at the extreme eastern end of the unit are well solidified, and a few additional purchases will largely complete the purchase work in this section.

Pisgah purchase unit.—No lands were approved for purchase on this unit during the past year. The status consequently remains the same as at the end of the preceding year. In the eastern section of the unit to which purchases have been extended there have been acquired 88,301 acres out of a total of 316,554 acres, of which about 25,000 acres consist of agricultural lands and private lands under forest management, the purchase of which at present by the Government would not be desirable. No purchases have yet been made in the western portion of this unit. In February, 1911, the acquisition by condemnation was authorized of five tracts having a total area of 225 acres, each of these tracts being an interior holding within the Pisgah National Forest and Game Preserve. While in private ownership there was a high fire hazard. Four of these tracts have now been acquired and the menace which they constituted has been eliminated. Early purchase policy looks to acquiring small holdings adjoining the lands already acquired, which will eliminate irregularities in boundary and facilitate administration and protection.

Nantahala purchase unit.—On this unit there were approved for purchase during the past year 389 acres offered by four different owners. These lands increase the total area acquired and being acquired on this forest to 75,089 acres out of a total of 514,959 acres, of which only a small proportion is regarded as agricultural or valuable for water-power purposes. There is also a small acreage which is being managed by private owners for sustained yield of timber. The lands which have been approved for purchase on this unit are in two groups, both located largely on the waters of the Nantahala River. The upper group forms a compact body at the head of the river and the lower group, which is less consolidated, is located lower down largely on the same stream. It is desirable to effect consolidation of the lands of the lower portion of the Nantahala River basin in order to secure most efficient administration. In addition to the purchased lands, there are two groups of lands known as the Olmsted lands transferred by act of Congress from the Treasury Department to the administration of the Department of Agriculture. One tract of the Olmsted lands located in Clay County, N. C., is too small to be economically protected against fire; while in Graham County, N. C., there are a number of small scattered parcels which

can not receive thorough protection until it is possible to acquire intervening lands and assemble a compact unit sufficiently large for a ranger district. One of the main features of the acquisition policy on this purchase unit looks forward to securing these consolidations.

Savannah purchase unit.—There were approved for purchase on the Savannah purchase unit during the past year 1,334 acres offered by 11 different owners. These are all small tracts, the largest being only 400 acres, but all are desirably situated so as to effect consolidation. These lands are all well timbered and add materially to the reserve of timber which forms a valuable part of the assets of this purchase unit. The gross area of this unit is 538,431 acres, of which 148,416 acres have been acquired or are in process of being acquired. Of the remaining lands, 19,912 acres belonging to private owners are being managed for permanent timber production, while more than 50,000 acres are agricultural in character or are valuable chiefly for water-power purposes and are not at present purchasable. Although considerable blocks of the acquired lands are well solidified, there are places where private lands are intermixed with national forest holdings. This is an unsatisfactory condition and results in the cost of protection being inordinately high. Future policy on this unit looks to consolidation and to the ultimate extension of the unit into Transylvania County, N. C. In South Carolina especially the Government holdings are scattered. Their consolidation is in large measure dependent upon the holdings of one owner which will connect up a number of isolated parcels and open the way for the purchase of a number of smaller tracts.

Georgia purchase unit.—No lands were approved for purchase on the Georgia unit during the past year. The total area acquired and being acquired amounts to 70,196 acres out of a total of 346,910 acres, of which, however, 85,879 acres belonging to private owners are already being managed for sustained yield of timber, while there is an area of 14,208 acres of agricultural lands. Purchases in the past have been restricted to the extreme western portion of the unit, and although there are two bodies of well-solidified lands, there are in the extreme northwestern and northeastern portions of the national forest many interior holdings. Early purchase policy contemplates the extinguishment of these openings. A considerable portion of the land in the northeastern portion of the unit, all of which is privately owned, is being protected from fire by its owners and at present is not for sale. A large tract is offered, however, in the southeastern portion of the unit, lying along the south side of the Blue Ridge Mountain in a section within which no lands have as yet been acquired.

Cherokee purchase unit.—On the Cherokee unit no lands were approved for purchase during the past fiscal year. The area acquired and being acquired is 141,636 acres, the same as last year, out of a total of 323,457 acres which constitutes the area of the purchase unit. The acquired lands occupy a nearly solid body at the southern end of the unit and are separated from lands at the northern end for the purchase of which negotiations are now in progress. Several agricultural districts, the lands in which amount to about 30,000 acres, should not be acquired. Future purchase policy on this unit looks to the acquisition of several large tracts lying at the north end of the

unit, together with smaller tracts adjoining these larger ones, the acquisition of which is dependent upon the larger boundaries.

Alabama purchase unit.—On the Alabama unit the commission has approved for purchase during the past year 3,241 acres offered by 36 different owners. While these are all small tracts they are most desirably situated for effecting consolidation. Most of them are timbered tracts, although some of them have been culled of the best trees, but in the aggregate they add materially to the reserve timber supply of this unit. Out of a total of 192,385 acres there have been approved for purchase 87,097 acres, which does not include 17,749 acres of national forests created from the public domain. Future purchase policy on this unit looks primarily toward continued consolidation by the acquisition of interior holdings whenever these are offered at reasonable prices. It also seems desirable that purchase work should be extended to the south of the present boundaries of the unit so as to acquire a considerable area of cut-over land which includes an area of longleaf pine lands, this being one of the most northern outposts of this coastal species to be found in the State of Alabama.

Arkansas and Ozark purchase units.—On the Arkansas and Ozark purchase units, which consist of the areas within the extreme boundaries of the national forests of these names, there have been approved for purchase 38,658 acres on the Arkansas unit and 21,072 acres in the Ozark unit which have been acquired or are in process of being acquired. All of this land constitutes interior holdings seriously interfering with administration, especially with grazing and protection against fires. In addition to a large number of similar small holdings on both forests, many of which contain no cleared land or at most only sufficient to have established a homestead claim, there are large areas chiefly held by railroads and lumber companies which should be acquired. Such of these lands as can be secured with the timber still standing thereon will add materially to the value of the timber owned by the Government on the alternating sections by permitting the sale of timber on logical logging units when the necessity for development arises. The lands on the Ozark Forest bear much valuable white oak timber; those on the Arkansas are valuable chiefly for the fine stands of yellow pine.

During the past year there were approved for purchase on the Arkansas a total of 621 acres in six different tracts. The purchase of no lands was authorized on the Ozark.

PROTECTION, ADMINISTRATION, AND DEVELOPMENT OF ACQUIRED LANDS

Organization and general administration.—All of the lands acquired under the Weeks law are administered as national forests within the eastern national forest district (district 7) under the jurisdiction of the district forester at Washington, D. C.

Following is a tabulation of the national forests comprising this administrative district, all of them except the Alabama, Arkansas, Florida, Ozark, and Wichita being made up entirely of lands purchased under the Weeks law. Eighty-two per cent of the area of the Alabama National Forest, 6 per cent of the Arkansas, and 7 per cent of the Ozark are, however, purchased lands, and the Florida National Forest is formed entirely from public domain.

Under the original provisions of the Weeks law, the Federal Government could not purchase forest lands in Florida adjacent to the national forest land because forests on these lands can not be considered as instrumental in promoting navigability of streams. Section 6 of the Clarke-McNary law (Public, No. 270) so modifies this restriction, however, as to permit the purchase of land on the watersheds of navigable streams which may be valuable for the production of timber, and under this amendment it may be possible to acquire certain Florida lands, although other desirable lands not located on the watershed of such streams would not be available for purchase. The Florida National Forest covers a gross area of over 700,000 acres, of which 382,000 acres is made up of scattered interior private holdings. To bring about adequate protection over the entire areas and to make possible by consolidation the development of an effective administrative unit, a further modification of existing legislation which would permit purchase of these interior tracts by the Government would be helpful and wise. The Wichita is a public land forest and game preserve of 61,000 acres in south central Oklahoma.

DISTRICT 7.—*Eastern national forest district*

National forest	State	Forest headquarters	Net acreage being administered under Weeks law to June 30, 1924
Alabama	Alabama	Moulton, Ala.	87, 097
Allegheny	Pennsylvania	Warren, Pa.	166, 937
Arkansas	Arkansas	Hot Springs National Park, Ark.	38, 658
Cherokee	Tennessee and Georgia	Knoxville, Tenn.	211, 832
Florida	Florida	Pensacola, Fla.	
Loquillo	Porto Rico	San Juan, P. R.	
Monongahela	Virginia and West Virginia	Elkins, W. Va.	174, 369
Nantahala	Georgia, North Carolina, and South Carolina.	Franklin, N. C.	223, 505
Natural Bridge	Virginia	Lynchburg, Va.	152, 048
Ozark	Arkansas	Russellville, Ark.	21, 072
Pisgah	North Carolina and Tennessee	Asheville, N. C.	280, 652
Shenandoah	Virginia and West Virginia	Harrisonburg, Va.	416, 046
Unaka	Virginia and Tennessee	Bristol, Tenn.	152, 864
White Mountain	New Hampshire and Maine	Gorham, N. H.	441, 274
Wichita	Oklahoma	Cache, Okla.	
Total			2, 346, 354

To each forest is assigned a forest supervisor, who, under the general instructions of the district forester, plans the work and supervises its execution. Where the volume of business warrants it, a deputy supervisor may also be assigned as well as technical assistants, who render expert service in the varied problems of silviculture and forest management. Supervisors and their deputies must be qualified foresters capable in every way of managing a public forest in accordance with the approved principles of practical scientific forestry.

Each forest is divided into ranger districts, each with a district ranger in charge. Rangers perform the duties directly involved in protecting their districts from fire, the supervision of timber sales, grazing, and special uses. They also help to build roads, trails, bridges, telephone lines, and other permanent improvements. Physical soundness and endurance are essential. This position is filled

through competitive civil-service examination. The average size of the ranger district in the intensively used purchased forests is 75,000 acres.

During the seasons of severe fire hazard in the national forests the permanent field force is supplemented by the employment of temporary forest guards, patrolmen, and lookoutmen, while peak loads of activity in timber sales, recreational use, and other phases of the work sometimes make necessary the employment of special temporary assistants.

The keynote of the administration of the national forests as public properties is the fullest utilization and development of all forest resources consistent with the fundamental purposes—watershed protection and timber production—for which they were established. Whoever wishes to make any use of the resources of the national forest for which a permit is required should consult the nearest forest officer.

Protection against fire.—For many years prior to their acquisition by the Federal Government the lands now embraced in the purchased national forests suffered severely from repeated forest fires. Some small areas, of course, escaped unscathed, but in the main the annual fire damage was very high and in many sections the mountain woods were almost 100 per cent burned over each year. By the mountain people woods fires were quite widely held to be necessary and beneficial and were encouraged, or at least considered as entirely unavoidable and therefore to be expected each season. At the time of purchase, too, these new national forests were largely isolated, inaccessible areas, rugged and difficult in topography, and devoid of anything like adequate systems of communication and transportation to serve as a basis for a fire-protection plan.

Nevertheless, the Forest Service launched aggressively into this most essential task of providing the new public forests the protection from fire without which not much else in the way of forestry practice could be hopefully attempted. New protective organizations were built up on each forest, lookouts established, systematic patrol initiated, roads and trails pushed into the interiors of the acquired blocks, fire tools and food caches for suppression crews located at convenient points, and telephone systems developed so that fires might be quickly reported and steps to suppress them promptly taken. With the areas of the forests increased by new purchases almost annually, and in the face of constant uncertainty as to the future and ultimate end of purchase work within the established areas engendered by dependence upon annual and fluctuating purchase appropriations, the task of perfecting the fire-protection system has perhaps been unusually difficult. The objective in this task is to develop a fire-protection system which will insure that the annual acreage loss by fire will not exceed one-tenth of 1 per cent of the total area of Government land under protection. It will be apparent from the following tabulation that the ideal is not yet reached, but on the whole, marked progress has been made. Certainly under protection there has been brought about a pronounced betterment in forest conditions and the tree growth which has taken place is nothing short of remarkable.

TABLE 6.—Area by calendar years from 1914 to 1923 on purchased forests under protection, area burned, and per cent of acreage burned; number of fires, cost of suppression, and total damages

FIRE-PREVENTION PROGRESS, PURCHASED FORESTS

Calendar year	Area under protection	Area burned	Percent- age of total area burned	Calendar year	Area under protection	Area burned	Percent- age of total area burned
	<i>Acres</i>	<i>Acres</i>			<i>Acres</i>	<i>Acres</i>	
1914.....	1,054,549	4,405	0.42	1919.....	1,777,980	13,866	0.78
1915.....	1,221,679	15,044	1.23	1920.....	1,790,666	19,607	1.04
1916.....	1,290,427	17,464	1.35	1921.....	1,976,951	21,070	1.06
1917.....	1,434,343	8,675	.60	1922.....	2,178,844	12,640	.58
1918.....	1,638,784	13,820	.84	1923.....	2,311,524	14,858	.64

FIRE COSTS AND DAMAGES

Calendar year	Number of fires	Total suppression costs	Total damages	Calendar year	Number of fires	Total suppression costs	Total damages
1914.....	494	\$3,468.68	\$1,514.00	1919.....	240	\$4,618.00	\$6,049.00
1915.....	441	6,543.69	13,867.00	1920.....	278	6,224.00	9,527.00
1916.....	462	7,540.14	9,201.00	1921.....	348	15,498.00	9,876.00
1917.....	352	3,271.00	2,599.00	1922.....	372	11,772.00	15,393.00
1918.....	200	2,571.93	4,750.00	1923.....	471	13,908.00	6,016.00

The most regrettable feature of the forest fire record in these eastern national forests is that the fires are practically all of human origin. Campers, railroads, slash burning, and steam sawmills annually contribute their quota of fires, but by far the greater number are directly attributable to deliberate woods burning based sometimes upon malice but usually upon ignorance or mistaken theories as to the effect of fires upon forest and forage production. It is notable from the foregoing table that during the years that the country was mobilized for war the area burned dropped sharply but that it rose even more sharply in the years immediately following, when unemployment and a nation-wide unrest were responsible for a wave of lawlessness, often running to incendiarism in the woods.

The cooperation of all forest users is aggressively sought with a view to a solution of the fire problem by preventing fires from starting and by promptly reporting any fire which is discovered. The degree to which such cooperation in fire protection on the part of the local people can be developed varies with the different forests, since in some regions the number of forest dwellers or near-by forest dwellers is greater than in others. Also the willingness to play an aggressive public-spirited part in fire protection varies greatly. A notable example of splendid cooperation is found on the Shenandoah Forest in Virginia. The thrifty farmers of that region were quick to see the destruction visited upon the timbered lands annually by forest fires and have responded admirably to the pleas of forest officers for aid and detection of forest fires. Many fires occurring near the homes of farmers are promptly detected and suppressed by the farmers and the ranger then advised. An ideal system of citizen cooperation has been built up on the Shenandoah and this system is followed on all forests where at all applicable.

In some unprogressive regions a very difficult situation is encountered. The people living within or near the forests do not yet recognize or appreciate the beneficial effects of forest-fire prevention, and they not only do not cooperate with the protection forces but are directly responsible for the annual recurrence of numerous fires. The situation thus presented is one of extreme difficulty, but it is vigorously attacked along the line of law improvement and enforcement, coupled with a systematic campaign of public education and publicity.

The solution of the fire problem in the purchased forests lies largely in this serious task of breaking down a local public sentiment which for generations has passively accepted or positively encouraged woods burning and of developing in its place a widespread knowledge of the need for and beneficial results of fire prevention which will translate itself into united public support of the protection idea. This calls for a well-planned, comprehensive, and sustained educational or publicity effort, and the facilities of the Forest Service for carrying on such a campaign should be expended to adequately meet this need.

Timber sales and forest management.—During the fiscal year ending June 30, 1924, the purchased forests under administration yielded a gross revenue of \$145,530, of which \$132,996 represents receipts from the sale of forest products, including saw timber, chestnut tannic-acid wood, pulpwood, tanbark, telephone poles, posts, ties, and fuel wood, the balance being miscellaneous receipts from grazing, special use, and fire trespass.

The following table shows by years the acquired areas and the corresponding receipts from the acquired land:

Fiscal year	Area acquired to date	Receipts	Fiscal year	Area acquired to date	Receipts
1915.....	348, 275	\$3, 978	1920.....	1, 455, 010	\$110, 250
1916.....	706, 974	9, 595	1921.....	1, 602, 905	107, 248
1917.....	947, 197	22, 154	1922.....	1, 740, 565	93, 432
1918.....	1, 078, 510	53, 129	1923.....	2, 205, 027	109, 766
1919.....	1, 348, 499	71, 492	1924.....	2, 337, 707	145, 530

During the past fiscal year the shrinkage in receipts which began during the fiscal year 1921, and which continued through 1922, ceased, the gross income for 1924 being the greatest in the history of the purchased forests although the income per acre was not quite so large as during 1920. With the revival of the hardwood lumber market has come a marked stimulation of both inquiries and sales, and a steady increase in receipts may be looked for; in fact, it is confidently expected that within a reasonable number of years the purchased forests will be self-supporting; i. e., cost of administration and receipts will balance.

While it is desirable from the financial standpoint to increase the receipts, especially since 25 per cent of the receipts is returned to the road and school fund of the States and an additional 10 per cent is spent on roads, nevertheless this is by no means the prime consideration. On the purchased lands there is estimated to be a stand of saw timber and other products of nearly five billion board feet. The chief object in selling timber is to improve the condition of the

forest. To this end much time during the past and preceding years has been devoted to the preparation of cutting plans. Such plans outline how much timber may be cut, where sale areas may be located, which areas should be cut first, etc. In preparing these plans, the needs of local industries dependent on the forests are always kept in mind, and it is the aim, as far as possible, consistent with the annual growth of a forest, to assure industries an annual supply of timber with a view to their permanent operation.

In the management of the forests there are many problems which require wise planning and good business judgment. The majority of the lands have been acquired in a cut-over condition, or else have been culled of the choicest timber. It therefore becomes necessary to dispose of a large amount of comparatively low-grade old-growth timber in order to liberate the young timber replacement already established and permit its rapid development.

On the White Mountain National Forest in New Hampshire and Maine, for example, there is a stand of some 300,000,000 board feet of mature and overmature hardwoods, the permissible annual cut from which far exceeds the total requirements of existing wood-using plants tributary to the forest. A market must be developed for this material. In the southern Appalachians the situation is complicated by the presence of the chestnut blight disease which is rapidly eliminating chestnut from consideration as a timber-producing tree. Large quantities of chestnut on the various national forests must be salvaged, if possible, before being completely killed, meanwhile providing for a future stand of the most valuable remaining species.

As a result of the policy followed, the condition of the purchased lands is continuously improving after cuttings designed to remove defective, mature, and overmature timber, thereby releasing thrifty young timber, and by creating conditions favorable for restocking. As a result of preventing fires, the acquired lands are rapidly being stocked with seedlings, assuring not only a second crop of timber but a much more even run-off of water and reduced erosion.

Stimulation of efforts of private owners.—It is believed that one of the most substantial contributions which the eastern national forests are at present making and will continue to make toward assuring a future timber supply is their value as demonstration forests in directing the efforts of private owners of forest land. Owners of 316,396 acres of privately owned lands within the purchase units are now protecting their lands and holding them with the object of securing future cuttings of timber from the second growth. Undoubtedly owners of much additional land located outside of the boundaries of the purchase units are doing likewise, thus following in a general way the practices of the Government in the management of the national forests.

The adoption of this policy on the part of private owners, all of whom hold their lands as sources of timber for the supply of mills, is an eloquent tribute to the methods employed by the Government which they have at least in part adopted. It is true, when private lands within designated boundaries of a purchase unit are withdrawn from possible sale by the owner and are managed as permanent investments with a view to securing a continuous yield of timber, that the plans of the Government for rounding out logical operation units on a large scale and for perfecting the most economic plans for

management and administration are to a certain extent frustrated. This, however, is far more than offset by the gratifying results which obtain from private initiative. When private lands are protected and managed by their owners for a continuous yield, the funds which are thus released can be employed in establishing a new purchase unit, which may in itself become a demonstration nucleus for the benefit of other private owners. Although the purchased forests are small in area as compared with the region in which they are situated, it is believed to be a fact that their influence is already far-reaching in guiding private owners in the methods of protecting their lands from fire and in the practice of conservative cutting. This influence will be still more widely extended as additional purchase units are established in other forest regions and in different States, so situated that they will tend to bring other groups of owners under their influence.

Benefits to stream flow.—The value of the assured protection of the forest cover to the development of water power is apparently fully realized in hydroelectric developments which are now being made on streams the upper basins of which are within the national forests. On the Tallulah and Chattooga Rivers, the headwaters of which are largely protected by the Nantahala National Forest, there have already been installed four units in a water-power development the completion of which calls for seven additional units. The four which have been installed have a generating capacity of 140,000 kilowatts (about 190,000 horsepower) and an average annual output of 534,000,000 kilowatt-hours. This large output is secured through storage of storm water by the release of which during periods of low water a nearly uniform output is obtained. The present storage capacity is nearly 8,000,000,000 cubic feet of water. With three additional power units already planned or in construction, the total generating capacity will be increased to 175,000 kilowatts and the total storage capacity to nearly 9,000,000,000 cubic feet. This storage will be so augmented upon the completion of the entire 11 power units that it is expected that more than 95 per cent of the discharge of these two streams, the largest headwaters of the Savannah River, will be controlled. This will undoubtedly affect to some extent the navigability of the lower part of the river, although neither the Chattooga nor the Tallulah River is a large stream. A similar development is now in progress on the Little Tennessee River, which is one of the important head streams of the Tennessee. The waters of the Little Tennessee River are protected by the Nantahala National Forest, and by a series of reservoirs it is designed to control more than 90 per cent of the discharge. The initial unit, for power generation only, consisting of a dam about 200 feet high, has been constructed, developing more than 90,000 horsepower. The value of the protection of forest cover on the basins on which the storage reservoirs are located is stressed, since this assures, in a region where erosion from naked soil is excessive, low turbidity, slight silting, and permanency in storage capacity of the reservoirs.

National forest improvements.—To facilitate the protection of these purchased national forests and their administration as public properties, to open up their resources for conservative utilization and make the forest areas fully useful to the public, a comprehensive and continuing program of permanent improvements is essential.

Such a program was undertaken coincident with the first year's purchases and has been pushed forward in pace with the progress of purchase as rapidly as funds and facilities would permit.

More than 1,000 miles of telephone lines have been built and placed in operation, providing a system of communication between the lookout on the mountain top, the district ranger at his station, the neighboring towns and supply points, and the forest headquarters. Without adequate communication systems the fight against the fire menace could never be successful. Again, these mountain lines, free to reasonable public use, are a most important factor in the general upbuilding and civic betterment of the entire mountain region which they serve.

Twenty-three lookout towers have been erected on as many high points where the fire lookouts have within range of vision great areas of forest. Such lookouts are relied upon for quick discovery and immediate report of every fire within range, and these two factors are the key to successful protection against fire.

The following additional improvements designed primarily for protective and administrative forces have been provided: 43 cabins for firemen, 3 lookout houses, 5 barns at stations of firemen, 10 dwellings for district rangers, 9 barns at district ranger stations, 2 office buildings, 4 garages, and 32 miles of yard and pasture fences at such stations.

To provide a reasonably complete system of improvements of the foregoing classes on the lands already acquired there is urgent need for nearly 400 miles of additional telephone lines, 500 miles of trails, 8 lookout towers, 9 lookout houses, and varying small numbers of the other improvements mentioned.

The steady progress of this development work not only makes possible more efficient protection year by year but is also directly operating to increase the value of these great public properties, hasten their development in every way, produce more public income from them, and in countless ways make them more useful and enjoyable to the public in general.

Roads and trails.—To date there has been made available for expenditure on roads and trails within the purchased forests a total of \$1,183,000. Of this amount there has been provided by the Federal-aid road act of 1916, \$223,000; by the Post Office appropriation act of 1919, \$460,000; and by the Federal highway act of 1921, \$500,000.

Legislation passed in 1912 provided that 10 per cent of the gross receipts from the use and sale of national forest resources should be expended on roads and trails within the forests. This income has been augmented from year to year through the purchase of additional lands and the increased use and sale of timber and resources. To date there has been made available from this law over \$58,000 for expenditure on roads and trails within the purchased forests and the amount due from the fiscal year 1924 receipts will total nearly \$15,000.

The Forest Service has constructed and improved 210 miles of roads within and adjacent to the purchased forests. Funds have been allotted for 140 miles of additional roads and an existing system of 360 miles is being maintained in serviceable condition.

The roads which have been constructed or improved include the Three States Road, leading from Walhalla, S. C., to Highlands, N. C., in the Nantahala Forest; the Pinkham Notch Road in the White Mountains, including a bridge over Peabody River, to the Dolly Coop public camping ground; the motor road in the Pisgah Forest, affording a delightful one-day tour from Asheville across the Pisgah Ridge; the James River Road in the Natural Bridge Forest; and the Bristol Road across the Unaka Forest.

The important community roads are being improved as rapidly as funds and facilities will permit and already much progress has been made toward opening up the purchased forests to the motor-ing public. Among the roads being prepared for early construction is the Toccoa Basin road in Georgia, leading from the Atlanta-Asheville Highway, south of Blairsville into the Toccoa Basin. Additional work is being done on the Three States and Pisgah motor roads above mentioned.

Special attention is being directed toward the construction of utilization roads necessary for the salvaging of the chestnut timber in the blight-stricken regions. Roads are also being constructed in order to make accessible other timber which is mature and ready for cutting and to facilitate proper administration and protection of the timber and other resources.

A system of 1,740 miles of trails has been constructed, funds have been allotted for an additional 110 miles, and an existing system of 2,100 miles is being maintained in serviceable condition. The primary service of these mountain trails is to facilitate protection of the timber stands from fire by rendering them more readily accessible to fire suppression forces with their supplies and equipment. At the same time these trails place within ready reach of the out-door enthusiast the most delightful sections of the mountain forests.

To provide a reasonably complete system of roads and trails for the purchased forests there is needed an additional mileage of over 2,000 miles of roads and over 1,000 miles of trails. A greater portion of these roads was built before the land was acquired but through neglect had become practically impassable.

Recreation.—The eastern national forests, from the White Mountains to the southern end of the Appalachians, are yearly patronized by tourists and visitors in constantly increasing numbers; over 1,000,000 recreation visitors enjoyed the eastern national forests last year. They are attracting people both for health and for recreation. At least 25,000,000 people are within a day's ride by motor of some one of the eastern forests. The use of these forests depends primarily upon their accessibility and on facilities for health and comfort. The betterment of existing roads and the construction of new roads brings increasing numbers of persons who wish to fish, hunt, tramp, and camp. The limited Federal appropriations available for promoting camp sanitation are frequently supplemented through cooperation with public-spirited citizens and organizations. The sum of \$2,400 is available for recreation and sanitary improvements during the next fiscal year. Improvements of a kind provided for city parks are not contemplated. Rather it is hoped to make the forests accessible and provide a supply of unpolluted water, garbage incinerators, simple toilet conveniences, and camp fireplaces designed to reduce fire danger and facilitate cooking. These and other like improvements are carefully planned to benefit the public.

A project of considerable importance is the proposed completion of the Appalachian Trail from the White Mountains to the terminus of the Blue Ridge Mountains in Georgia. Several sections of the trail have been constructed as a part of the protection program on the forests, and the work of providing the connecting links will be undertaken by private agencies. Since the forests are on a revenue-producing basis from the sale of forest products, it is not necessary to seek revenue from the tourists. Camping is free and is being encouraged as fast as facilities are provided. The presence of wild life, especially game, does much to enhance the recreational value of the forests.

Fish and game.—Sportsmen are becoming more interested in the production of fish and game on the national forests. At the present time they are often not only willing to cooperate by contributing funds to secure stocking of fish and game but are glad to assist in the enforcement of State and Federal laws designed to protect breeding animals. Such a public sentiment is an important factor in protecting and breeding fish and game.

Two new game refuges have been proclaimed on the Cherokee National Forest in Georgia and Tennessee with an aggregate area of approximately 3,400 acres. This action is made possible by the necessary authorization of these States which have ceded to the Federal Government authority to make necessary rules and regulations in respect to game, fish, and birds. The existence and successful operation of the Pisgah Game Preserve in North Carolina has been previously reported. The elk are increasing to the extent that it may be necessary to release them from the pasture but the buffalo are losing ground as to vitality and numbers. Better deer protection is being achieved.

The outflow of game from these refuges will be available for hunting. It is believed that the recently adopted policy of creating such small game refuges on which game can be effectively protected will be the solution of the efforts for increasing the amount of game. This policy secures local approval and support more effectually than declaring a closed season over large areas on which it is impossible to give adequate protection.

The White Mountain National Forest continues to afford better hunting than any other of the eastern forests. However, it is becoming apparent that there is need for the establishment of game refuges within the area in order that game may breed undisturbed in favored localities if good hunting is to be maintained. This matter is being taken up with interested parties.

In 1917 a sportsmen's association liberated 17 elk in the vicinity of Arcadia on the Natural Bridge Forest. By 1923, as the result of rigid protection, this number had increased to about 80. In 1917 eight elk were liberated on the Shenandoah unit. Persistent poaching has entirely destroyed this nucleus of a herd.

The spawning beds at York Pond on the White Mountains, constructed and operated by the Bureau of Fisheries for the purpose of obtaining a pure source of brook-trout eggs, have been virtually completed, and this development means an assured continuance of the facilities for stocking streams in this region. The ultimate capacity of this development is 20,000,000 eyed fish eggs.

Grazing.—The grazing under permit of 9,000 head of cattle and horses is authorized on the forests. Small numbers of other domestic animals are also grazed. The number to be grazed is carefully restricted in order to prevent overstocking, with detriment to the range and the extermination of young timber. This use of the forest tends to promote diversified agriculture and to maintain soil fertility on the farms adjoining the national forests. Moderate grazing also has a beneficial effect in reducing the fire hazard and affords a means of livelihood to residents of isolated regions where transportation conditions are difficult for ordinary farm products. Except for a small number of stock allowed free, a charge is made for grazing in the national forests.

Other uses.—There is a legitimate demand for the use of portions of the acquired lands. Some small parcels of agricultural land are acquired in connection with the purchase of large tracts. These lands are frequently leased to near-by farmers and the lands thus serve their highest use. There is also a considerable demand for well-located accessible areas for summer homes. The leasing of such sites is not being extended where it tends to interfere with the more general demand for lands for camping and recreation, for present and prospective game refuges, city water supplies, etc. Other special uses embrace such projects as rights of way for pipe lines, for telephone lines, for water supplies, and for railroads and highways, sawmills, corrals, manufacturing plants, quarries, etc. Permittees pay for the use of the lands involved and are required to observe such conditions as are necessary to the public welfare.

APPROPRIATIONS AND FINANCIAL STATEMENT

The appropriation of \$450,000 for the year 1924 brings the total amount which has been appropriated and made available for use to \$13,517,320.76, the appropriations being as follows: Act of March 1, 1911, \$11,000,000, of which \$2,982,679.24 reverted to the Treasury on account of the fact that \$1,000,000 was for the fiscal year 1910 and did not become available, while of the \$2,000,000 appropriated for the fiscal year 1911 only \$17,320.76 could be economically expended.

The agricultural appropriation bill of June 11, 1916, made \$3,000,000 available. The act of July 24, 1919, provided \$600,000, and that of March 3, 1921, added \$1,000,000 for the fiscal year 1922. The act of May 11, 1922, carried \$450,000 for the fiscal year 1923. By the act of February 26, 1923, \$450,000 became available for the fiscal year 1924, and an appropriation of \$818,540 has been made for the fiscal year 1925. The tables which follow show the financial situation at the close of the fiscal year 1924:

STATEMENT OF EXPENDITURES

The following statement shows in detail the expenditures incurred in carrying on operations under the Weeks law during the fiscal year ended June 30, 1924:

Appropriation "National Forest Reservation Commission, 1924" ..		\$25, 000. 00
Expenditures for fiscal year ended June 30, 1924:		
Stationery and office supplies	\$12. 44	
Printing and binding	302. 83	
		<hr/> 315. 27
Unexpended balance June 30, 1924		24, 684. 73

Outstanding obligations June 30, 1924.....	None.
Balance to revert to Treasury.....	\$24, 684. 73
Appropriation "Acquisition of lands for protection of watersheds of navigable streams, 1922"; unexpended balance from fiscal year 1923, available July 1, 1923 (see report of National Forest Reservation Commission for fiscal year 1923, S. Doc. No. 59, 68th Cong., 1st sess.).....	522, 015. 81
Expenditures during fiscal year 1924.....	522, 015. 68
Unexpended balance, to revert to Treasury.....	. 13
Appropriation "Acquisition of lands for protection of watersheds of navigable streams, 1923"; unexpended balance from fiscal year 1923, available July 1, 1923 (see Report of National Forest Reservation Commission for fiscal year 1923, S. Doc. No. 59, 68th Cong., 1st sess.).....	342, 049. 52
Expenditures during the fiscal year 1924.....	95, 962. 72
Unexpended balance available for further disbursement, July 1, 1924.....	246, 086. 80
Appropriation "Acquisition of lands for protection of watersheds of navigable streams, 1924".....	450, 000. 00
Expenditures during the fiscal year 1924.....	143, 272. 51
Unexpended balance available for further disbursement, July 1, 1924.....	306, 727. 49
Appropriation "Acquisition of lands for protection of watersheds of navigable streams"; unexpended balance from fiscal year 1923, available July 1, 1923 (see report of National Forest Reservation Commission for fiscal year 1923, S. Doc. No. 59, 68th Cong., 1st sess.).....	275, 998. 18
Expenditures during the fiscal year 1924.....	105, 568. 30
Unexpended balance available for further disbursement, July 1, 1924.....	170, 429. 88
Total unexpended balance of all appropriations, July 1, 1924.....	723, 244. 17
Against this unexpended balance there were obligations on July 1, 1924, in the form of executed contracts amounting to \$530,605.85 and for salaries and miscellaneous expenses amounting to \$13,624.82. The remaining \$179,013.50 is encumbered through the contemplated purchase of several tracts authorized by the National Forest Reservation Commission, formal contracts for which had not been executed prior to July 1, 1924.	
Amounts expended during the fiscal year 1924 from the four available appropriations for "Acquisition of lands for protection of watersheds of navigable streams," as shown above:	
Appropriation for 1922.....	522, 015. 68
Appropriation for 1923.....	95, 962. 72
Appropriation for 1924.....	143, 272. 51
Appropriation without year.....	105, 568. 30
Total expenditures from all appropriations during the fiscal year 1924.....	866, 819. 21

Analysis of expenditures during fiscal year 1924

Classification	Forest Service	Solicitor's office	Purchase of lands	Total
Personal services ¹	\$79,857.11	\$34,505.60	-----	\$114,362.71
Stationery and office supplies.....	1,143.84	-----	-----	1,143.84
Fuel.....	23.00	15.00	-----	38.00
Provisions.....	4,928.53	-----	-----	4,928.53
Sundry supplies.....	877.82	-----	-----	877.82
Materials.....	293.46	-----	-----	293.46
Telegraph service.....	10.56	-----	-----	17.32
Telephone service.....	174.94	73.30	-----	248.24
Other communication service.....	7.85	-----	-----	7.85
Travel expenses.....	18,309.72	5,071.75	-----	23,381.47
Transportation of things.....	1,812.07	13.28	-----	1,825.35
Rent of buildings.....	748.00	896.20	-----	1,644.20
Repairs and alterations.....	187.37	-----	-----	187.37
Special and miscellaneous current expenses.....	110.02	51.06	-----	161.08
Furniture, furnishings, fixtures.....	62.20	-----	-----	62.20
Miscellaneous equipment.....	2,328.76	98.12	-----	2,426.88
Lands.....	-----	-----	\$715,212.89	715,212.89
Total.....	110,875.25	40,731.07	715,212.89	866,819.21

¹ The additional amount of \$10,676.60 was also paid to employees of the Forest Service and the solicitor's office working under the Weeks law, from appropriation "Increase of compensation, Department of Agriculture."

If the items of expenditure are further analyzed and distributed upon the basis of cost per acre of lands acquired, it is found that the supervision overhead, covering both cost of timber examination and survey work, amounts to about 9 cents per acre. The cost of land appraisals, including field supervision and testimony of men given in court in condemnation cases, amounts to about 17 cents per acre for the acreage approved for purchase. It is to be remembered in this connection, however, that a considerably larger acreage as a rule is examined each year than is approved for purchase, and is subsequently acquired. Some of the land which is examined is found to be held by the owners at higher prices than the Government would be justified in paying on the basis of the values found by the appraisal. The appraisals which are made are very detailed and it is this thorough knowledge of the conditions on each tract which is the greatest safeguard to the Government in making its purchases.

The cost of appraisals would be only a little higher if the lands were heavily timbered, but since a large portion of the lands which are acquired are cut over or lightly timbered this results in the cost of appraisal and supervision seeming relatively high in comparison with the cost of the land itself. The cost of title work has been 24.7 cents per acre for the lands acquired and the cost of survey work about 35 cents per acre. The cost of title work and survey work are the same irrespective of whether lands are heavily timbered or whether they are cut-over lands of very low value.

The law requires that only safe titles shall be accepted, and this necessitates the making of a most careful title examination in order that this requirement of the law may be complied with. In the same way the cost of survey work is the same irrespective of whether lands are high in price or low in price per acre. Practically all of the lands which are being acquired, however, are wild lands and many of the lines have never been previously located, and this in a rough country adds materially to the cost of making an accurate survey and locating lines. As a matter of fact, if these lands were

all heavily timbered and valuable lands it is probable that all of them would have been accurately surveyed and that there would be little difficulties about titles, overlaps, and counterclaims. It is desirable that title work shall be of such a standard and survey work so accurate that after title has once passed to the Government there shall be no complaint either on the part of the vendor or adjoining owners.

So long as these lands are of relatively low value counterclaimants can not be expected to aggressively assert their claims. It can be expected as a result of protection and with rapidly advancing timber prices that the stands of timber which will develop within a few decades will make many of these lands sufficiently valuable to justify expensive litigation. This is an additional reason why survey and title work should now be most thoroughly done so as to preclude the possibility of such action on the part of any claimant to these properties in whole or in part. The cost of examination by the Geological Survey has amounted to 2 cents per acre. The total cost of acquiring lands thus amounts to 86 cents per acre.

FUTURE WORK

The field to be covered in the purchase of lands for eastern national forests has been greatly augmented by the passage of House bill 4830, Sixty-eighth Congress, which was approved June 7, 1924 (Public, 270), known as the Clarke-McNary law. Among other provisions this act modifies section 6 of the act of March 1, 1911 (36 Stat. 961), so as to permit the acquisition by the Government for national forest purposes of lands on the watersheds of navigable streams which in the opinion of the Secretary of Agriculture may be necessary for the production of timber, as well as lands which are beneficial in the protection of the streams' navigability. All such lands, however, before purchase are to be examined by the Secretary of Agriculture in cooperation with the Geological Survey and a report is to be submitted to this commission to show that their control by the Federal Government will promote or protect the navigability of streams or will promote the production of timber thereon. The force of this amendment is to permit the acquisition of lands within the level or rolling region of the pine belt of the coastal plain of the Southeastern States, lands within the region of the Great Lakes and southern New England, or similar lands elsewhere in the timber-producing regions of the United States if located upon the watersheds of navigable streams.

In anticipation of possible purchases in the coastal plain region of the Southeastern States examinations have already been made in eastern Texas, in Louisiana, and in Mississippi, States in which no lands have been acquired by the Federal Government for national forest purposes, and in the coastal regions of Alabama and Georgia. It is believed that there are excellent opportunities for the establishment of national forests in these regions which will be of as great value to the pine regions in promoting the production of timber as the national forest in the White Mountains is in maintaining a supply of spruce timber.

In extreme eastern Texas there seems to be opportunity for the establishment of three national forests. One of these would be located within the longleaf pine belt, one within the shortleaf pine

region, and another where the loblolly pine forms the larger portion of the forest. The longleaf pine timber of Texas is being rapidly removed and on a large portion of these cut-over lands restocking is scattered or is in patches. It is believed it will be possible, however, to acquire in eastern Texas an area of cut-over longleaf pine land on which there is a large amount of young timber and which for this reason would soon yield a revenue, and on which no artificial restocking would be necessary. As a result of protection against fire there would be augmented growth and denser natural restocking.

In Louisiana it has been found possible to locate prospective purchase units within the longleaf pine belt and within the shortleaf pine zone and to select cut-over lands on which there is already a large proportion of young timber.

In southern Mississippi the proposed purchase units are within the longleaf pine region. One is located within the sand hills near the coast and extending into Alabama; another is in the mixed longleaf pine and hardwood belt, the hardwoods being chiefly oak and hickory on red clay hills; while a third is largely longleaf pine on loamy uplands with considerable loblolly pine on the moister sites and oaks and gums on the wet lands.

In Georgia a prospective purchase unit has been located within the slash pine belt. This proposed unit includes large areas on which there are excellent stands of young timber from switches to pole size, thus offering an early opportunity for utilization of resources on the basis of a permanent yield. Turpentine and other naval store products can be extracted from slash pine lands at an early age and at a comparatively small size. The exploitation of a forest well stocked in trees of graduated sizes and ages can be continued indefinitely if provision is taken for maintaining the supply of the younger age classes. Slash pine, on account of the facility with which restocking is secured, the rapid initial rate of growth, and the sustained growth until late in life, offers a most excellent opportunity for the application of the principles of sustained yield as applied to a southeastern yellow pine. Since slash pine naturally grows on moister sites, its stands during the period of establishment and early growth are less exposed to fire hazard, and complete protection is more easily secured than in the case of longleaf pine, which forms the dominant growth over a large part of the sandy and drier uplands of the Southern States.

Likewise looking forward to an extension of work in those regions where the protection of stream flow is of paramount importance, prospective areas have been located within the Ozark region of Missouri and in southeastern Oklahoma.

Section 8 of the Clarke-McNary law also contains a provision which may result in materially increasing the acreage of lands set aside for national forest purposes. This section authorizes the Secretary of Agriculture to ascertain and determine the location of public lands chiefly valuable for stream flow protection or for timber production which can be economically administered as parts of national forests and to report his findings to this commission; if this commission shall determine that the administration of such lands by the Federal Government will protect the flow of streams used for navi-

gation or for irrigation, or will promote a future timber supply, the President shall lay the findings of the commission before the Congress of the United States.

Future work on established purchase units largely looks toward carrying forward the work of consolidation. On a few units, such as the Potomac and Shenandoah, purchase work is very largely completed, and it will be continued on others as rapidly as funds are available and suitable lands are offered at reasonable prices. With a view to maintaining the work on the plane on which it can be conducted most economically, the commission has authorized the Secretary of Agriculture to transmit to the Director of the Budget an estimate for the fiscal year 1926 in the amount of \$2,000,000. With an annual appropriation of this amount or with assurance that it would be continued from year to year at not less than this amount, the commission would be justified in putting into execution plans for the expansion of the purchase work through the establishment of a number of new purchase units in regions where the protection of stream flow is an important consideration, as well as the location of units within new fields opened through section 6 of the Clarke-McNary law. Certain lands in Kentucky examined by the Secretary of Agriculture where the forest conditions seemed suitable for the establishment of national forests have been affirmatively reported upon by the United States Geological Survey regarding the beneficial influence of their forest cover in promoting navigability.

